Nama: **Ibnu Fajar Setiawan** **NIM:** **065002000006**		**MODUL 7** **Nama Dosen:** **Ir. Teddy Siswanto, MMSi**
Hari/Tanggal: **Hari, 23 Mei 2022**	**Praktikum Data Warehouse**	**Nama Asisten Labratorium:** **1. Azhar Rizki Zulma** **065001900001** **2. Nadiya Amanda Rizkania** **064001900003**

Persiapan Proyek Akhir 1

1. Teori Singkat

Data warehouse adalah jenis sistem manajemen data yang dirancang untuk memungkinkan dan mendukung kegiatan business intelligence (BI), terutama analitik. Gudang data semata-mata dimaksudkan untuk melakukan kueri dan analisis dan sering berisi sejumlah besar data historis. Data dalam gudang data biasanya berasal dari berbagai sumber seperti file log aplikasi dan aplikasi transaksi. Gudang data memusatkan dan mengkonsolidasikan sejumlah besar data dari berbagai sumber. Kemampuan analitisnya memungkinkan organisasi untuk memperoleh wawasan bisnis yang berharga dari data mereka untuk meningkatkan pengambilan keputusan. Seiring waktu, ia membangun catatan sejarah yang dapat sangat berharga bagi para ilmuwan data dan analis bisnis. Karena kemampuan ini, gudang data dapat dianggap sebagai "sumber kebenaran tunggal" organisasi.

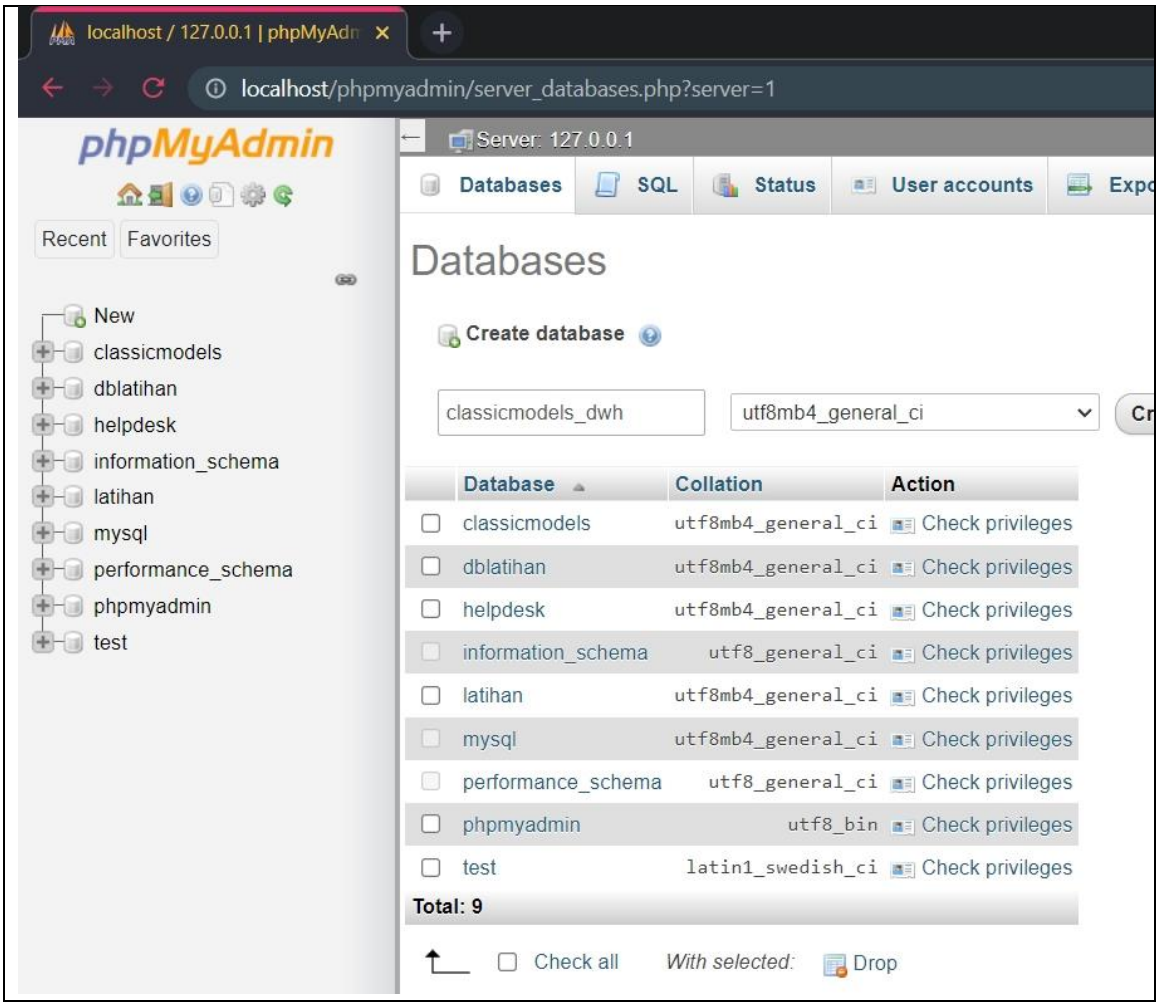
2. Alat dan Bahan

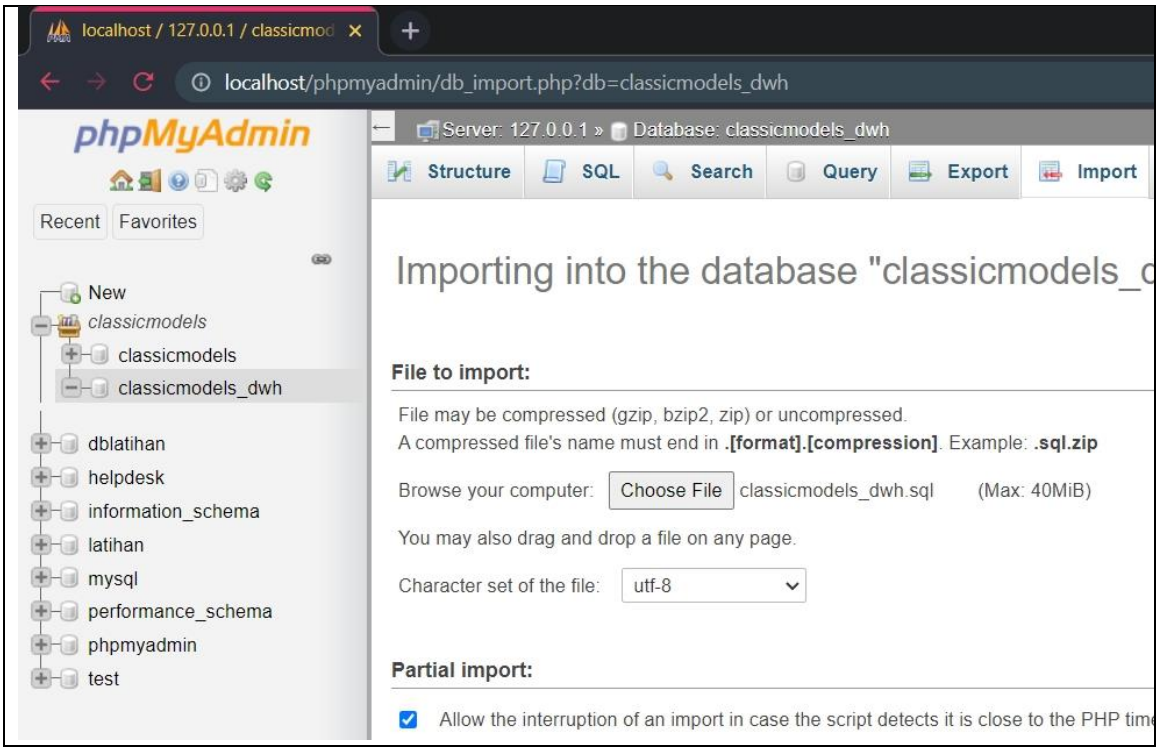
Hardware : Laptop/PC
Software : Spoon Pentaho from Hitachi Vantara

3. Elemen Kompetensi

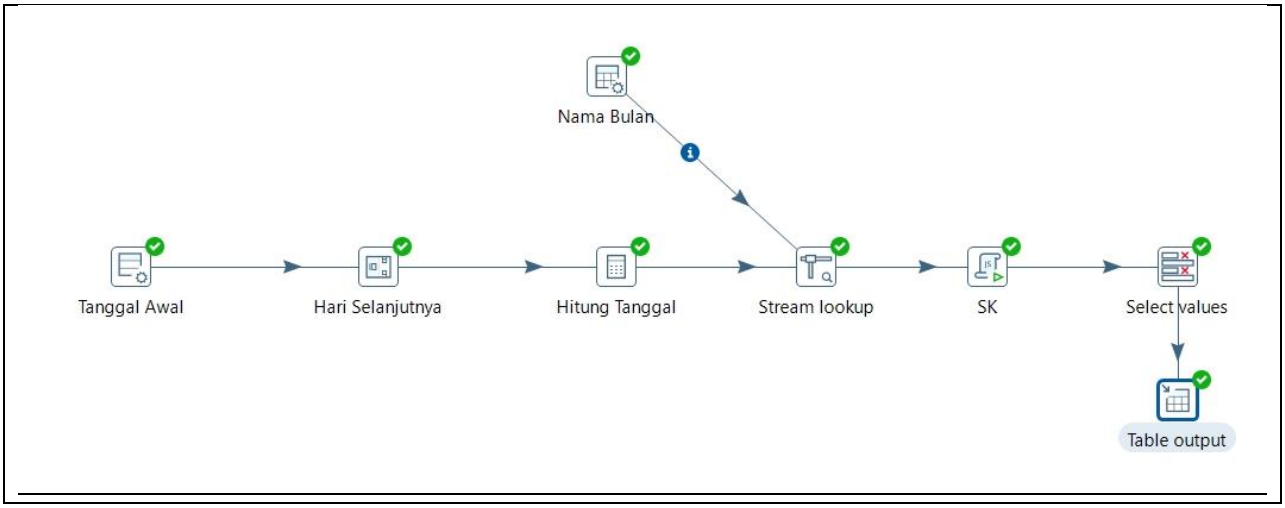
a. Latihan pertama – Dim Date Transformation

1. Buka XAMPP dan Nyalakan Apache serta MySQL lalu buka 127.0.0.1/phpMyAdmin pada browser anda dan buat database baru bernama classicmodels_dwh lalu import data SQL yang diberikan Asisten Laboratorium.

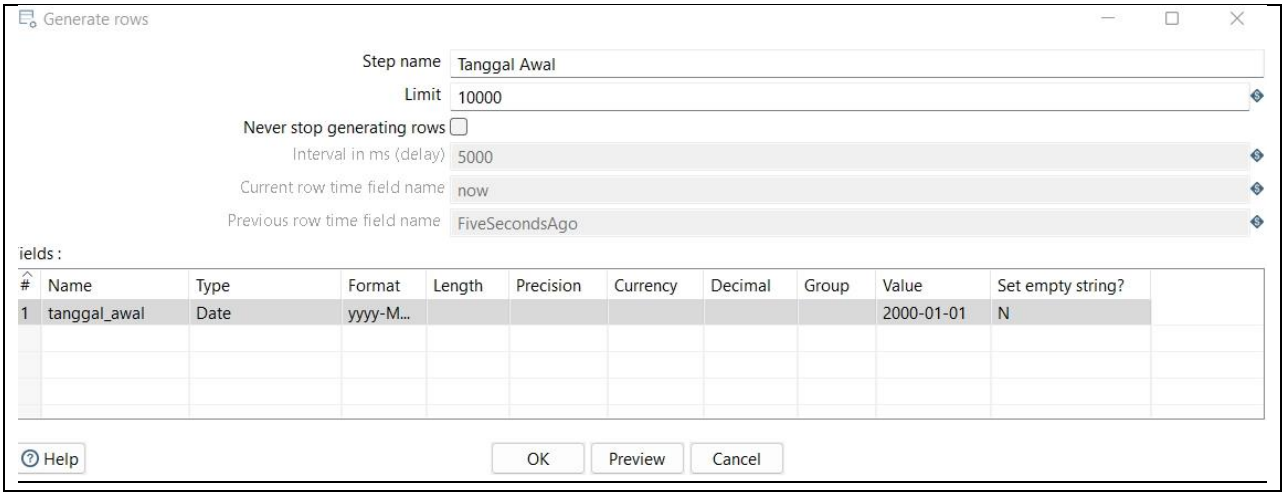

localhost / 127.0.0.1 | phpMyAdm
localhost/phpmyadmin/server_databases.php?server=1
phpMyAdmin
Recent
Favorites
New
classicmodels
dblatihan
helpdesk
information_schema
latihan
mysql
performance_schema
phpmyadmin
test
Server: 127.0.0.1
Databases
SQL
Status
User accounts
Databases
Create database
classicmodels_dwh
utf8mb4_general_ci
Database
Collation
Action
classicmodels utf8mb4_general_ci Check privileges
dblatihan utf8mb4_general_ci Check privileges
helpdesk utf8mb4_general_ci Check privileges
information_schema utf8_general_ci Check privileges
latihan utf8mb4_general_ci Check privileges
mysql utf8mb4_general_ci Check privileges
performance_schema utf8_general_ci Check privileges
phpmyadmin utf8_bin Check privileges
test latin1_swedish_ci Check privileges
Total: 9
Check all
With selected:
Drop



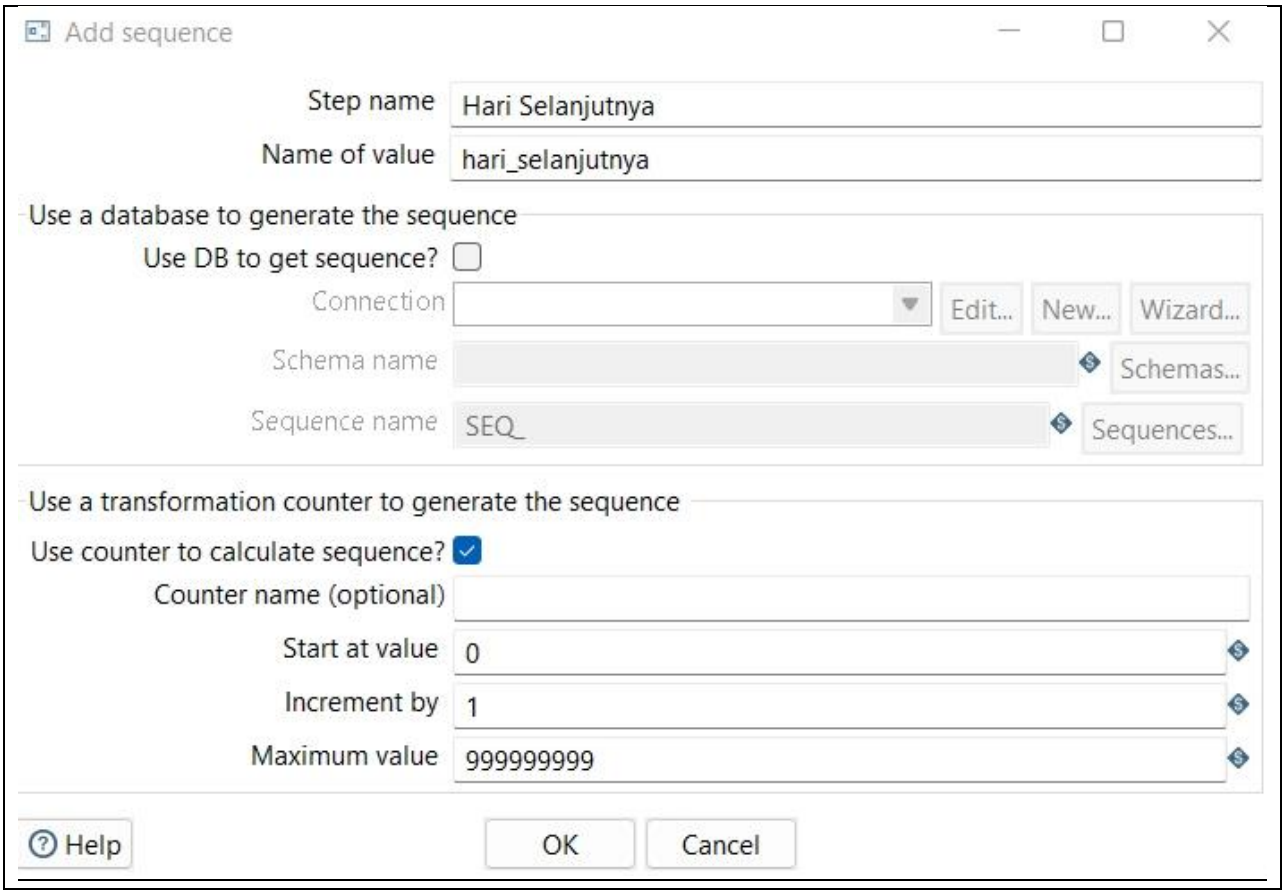
2. Struktur Dim Date



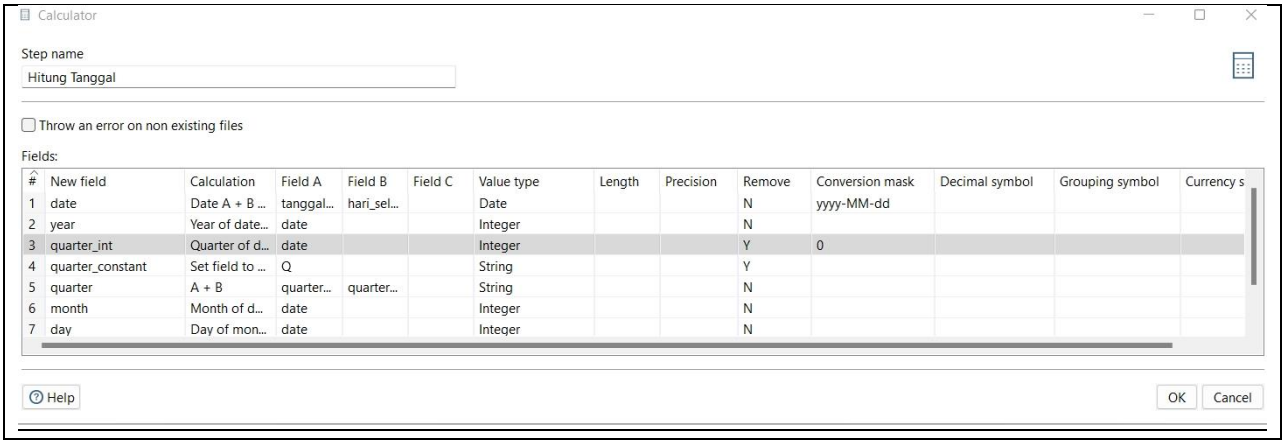
3. Tanggal Awal – Generate Rows



4. Hari Selanjutnya – Add sequence.

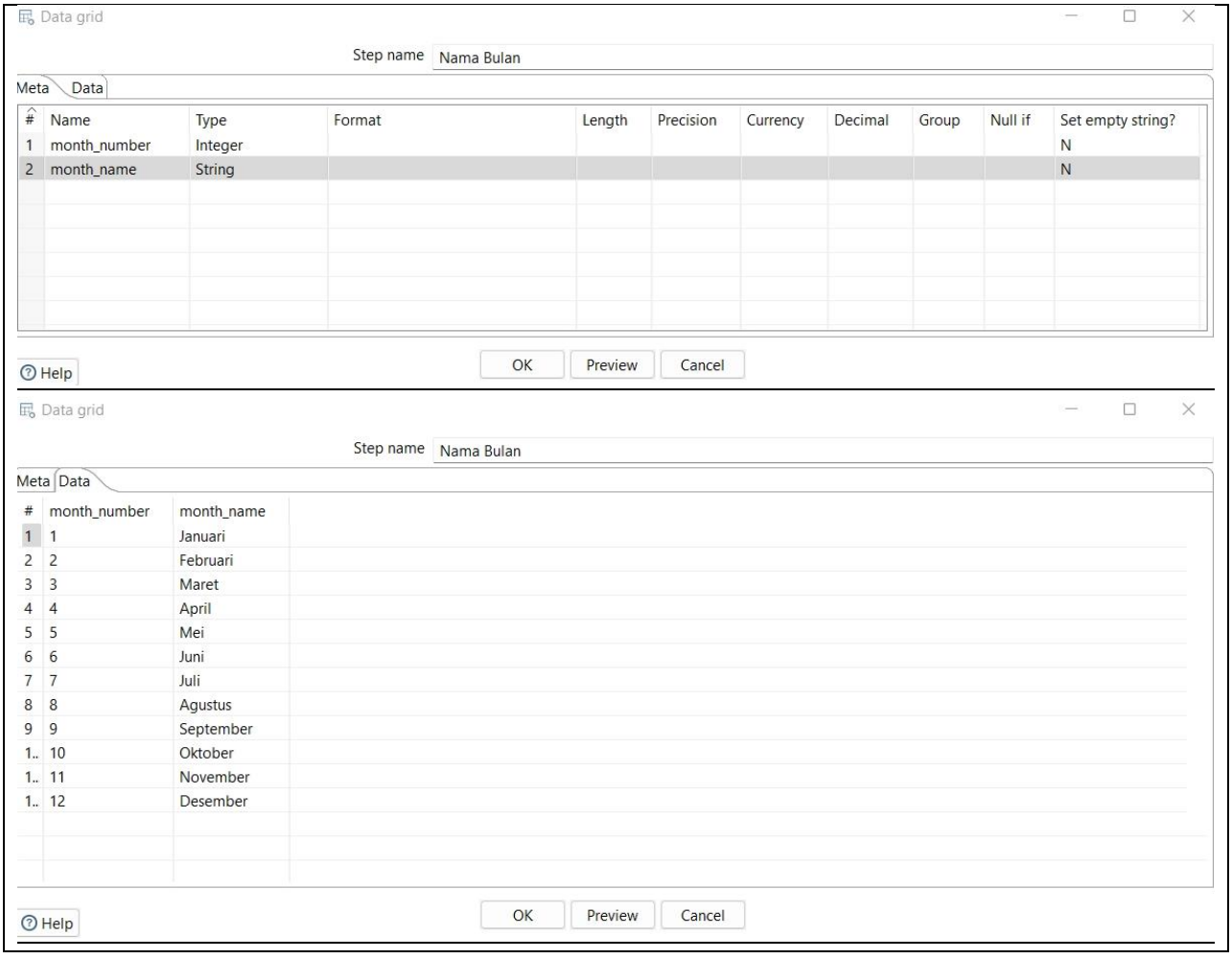


5. Hitung Tanggal – Calculator.



#	New field	Calculation	Field A	Field B	Field C	Value type	Length	Precision	Remove	Conversion mask	Decimal symbol	Grouping symbol	Currency s
1	date	Date A + B ...	tanggal...	hari_sel...		Date			N	yyyy-MM-dd			
2	year	Year of date...	date			Integer			N				
3	quarter_int	Quarter of d...	date			Integer			Y	0			
4	quarter_constant	Set field to ...	Q			String			Y				
5	quarter	A + B	quarter...	quarter...		String			N				
6	month	Month of d...	date			Integer			N				
7	day	Day of mon...	date			Integer			N				

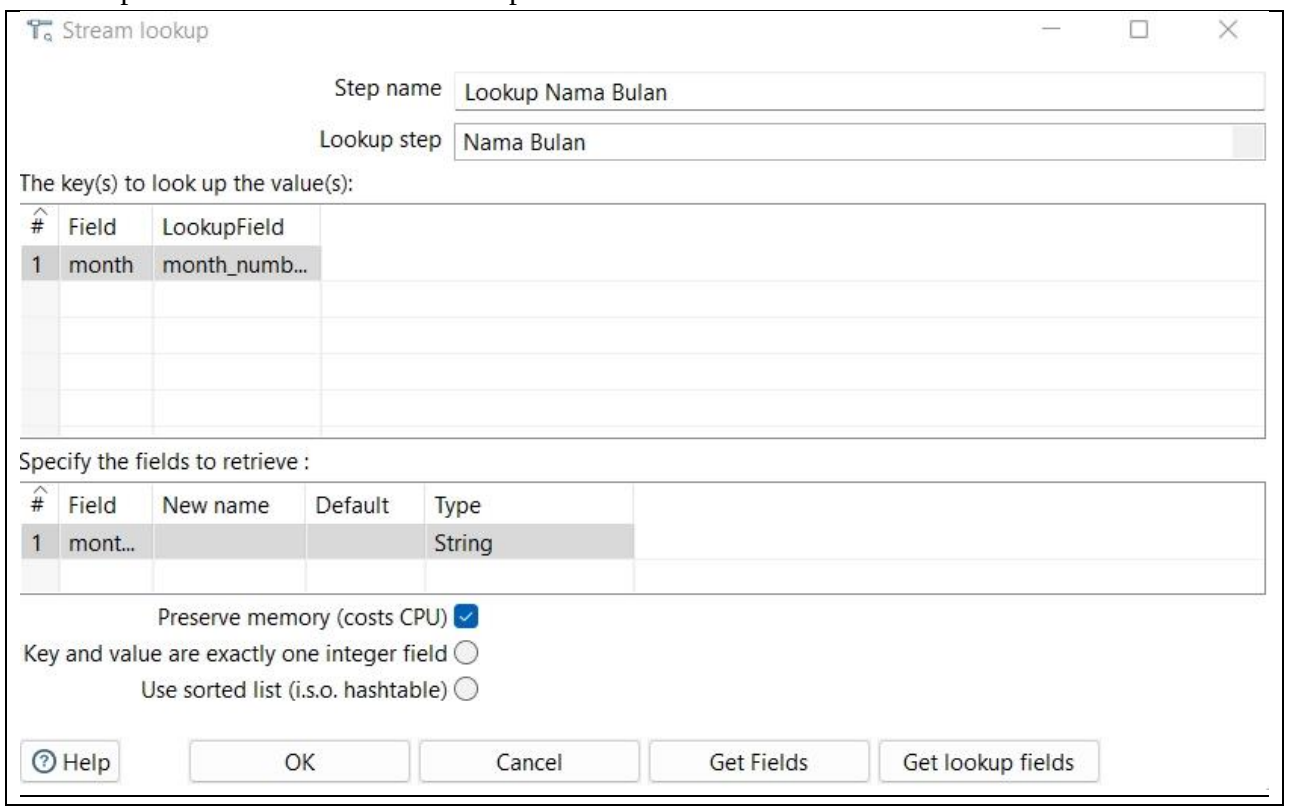
6. Nama Bulan – Data Grid.



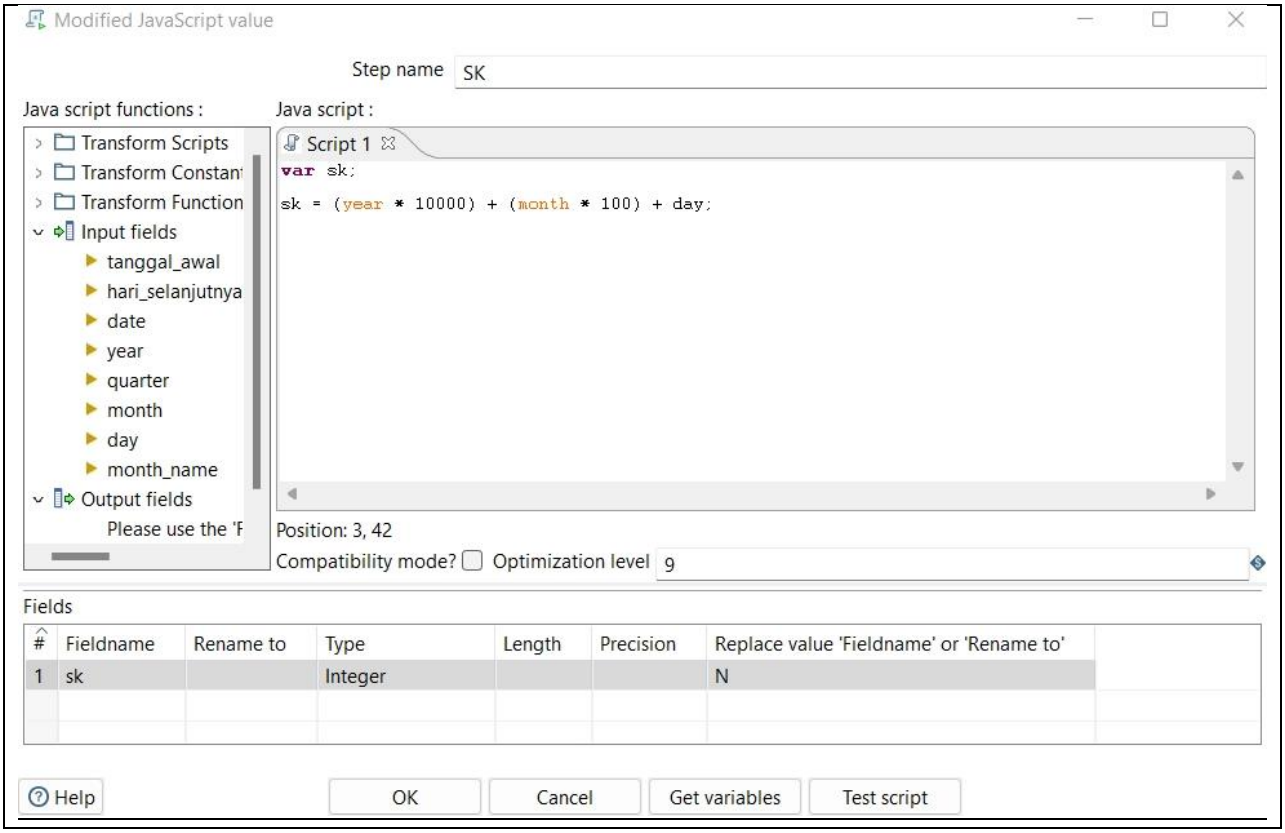
#	Name	Type	Format	Length	Precision	Currency	Decimal	Group	Null if	Set empty string?
1	month_number	Integer								N
2	month_name	String								N

#	month_number	month_name
1	1	Januari
2	2	Februari
3	3	Maret
4	4	April
5	5	Mei
6	6	Juni
7	7	Juli
8	8	Agustus
9	9	September
1..	10	Oktober
1..	11	November
1..	12	Desember

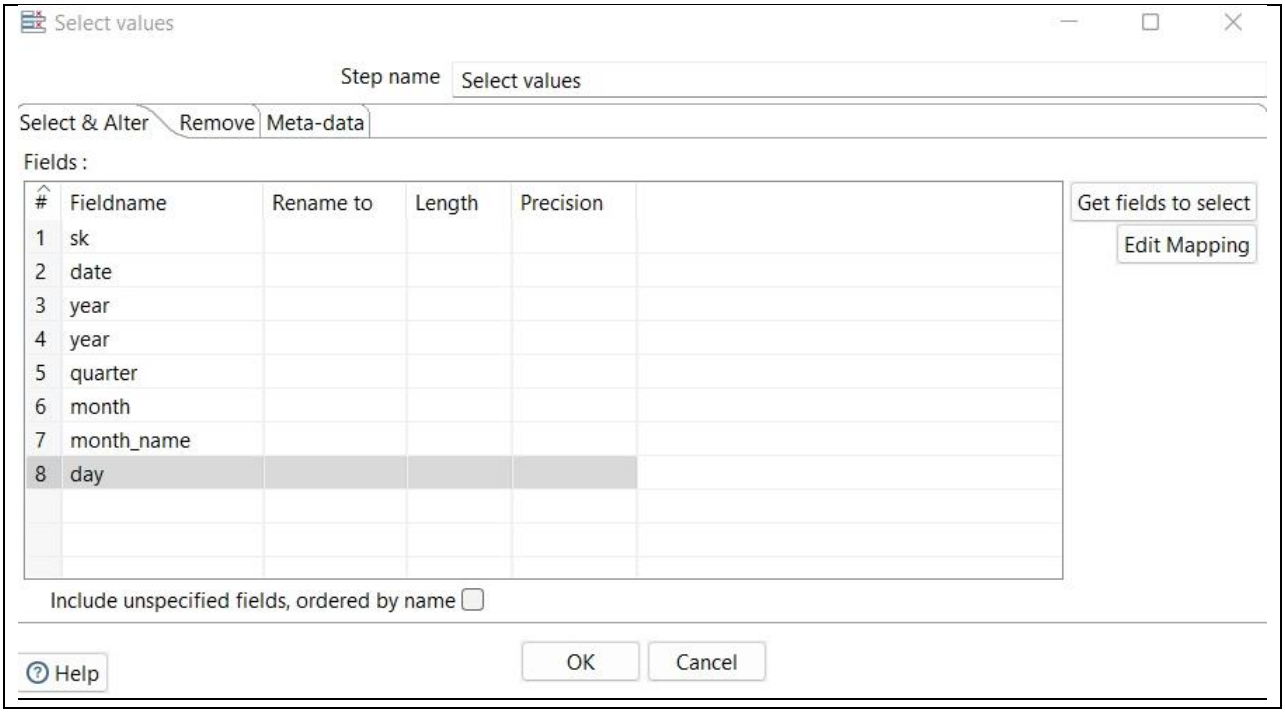
7. Lookup Nama Bulan – Stream lookup.



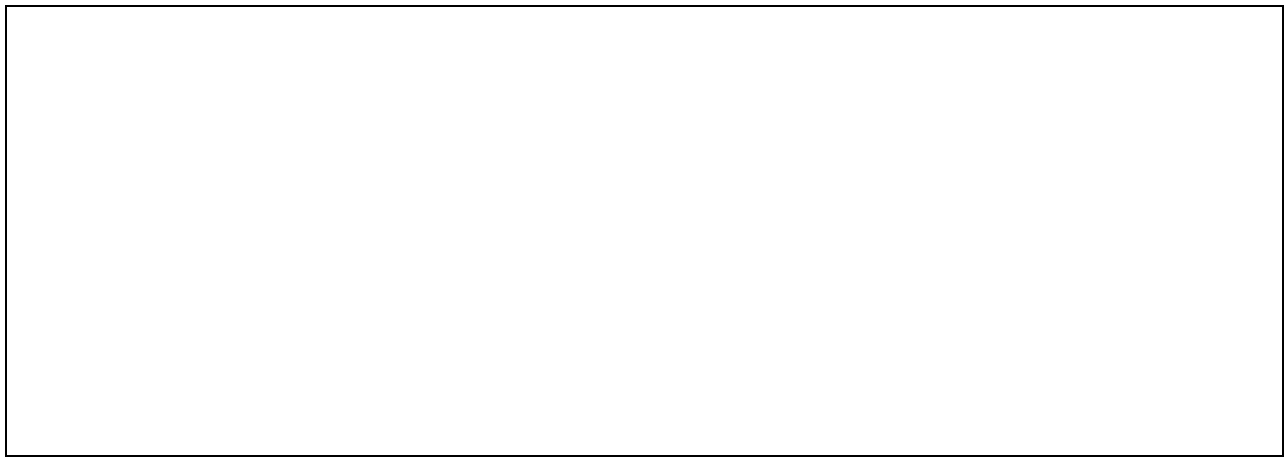
8. SK – Modiefied JavaScript value.

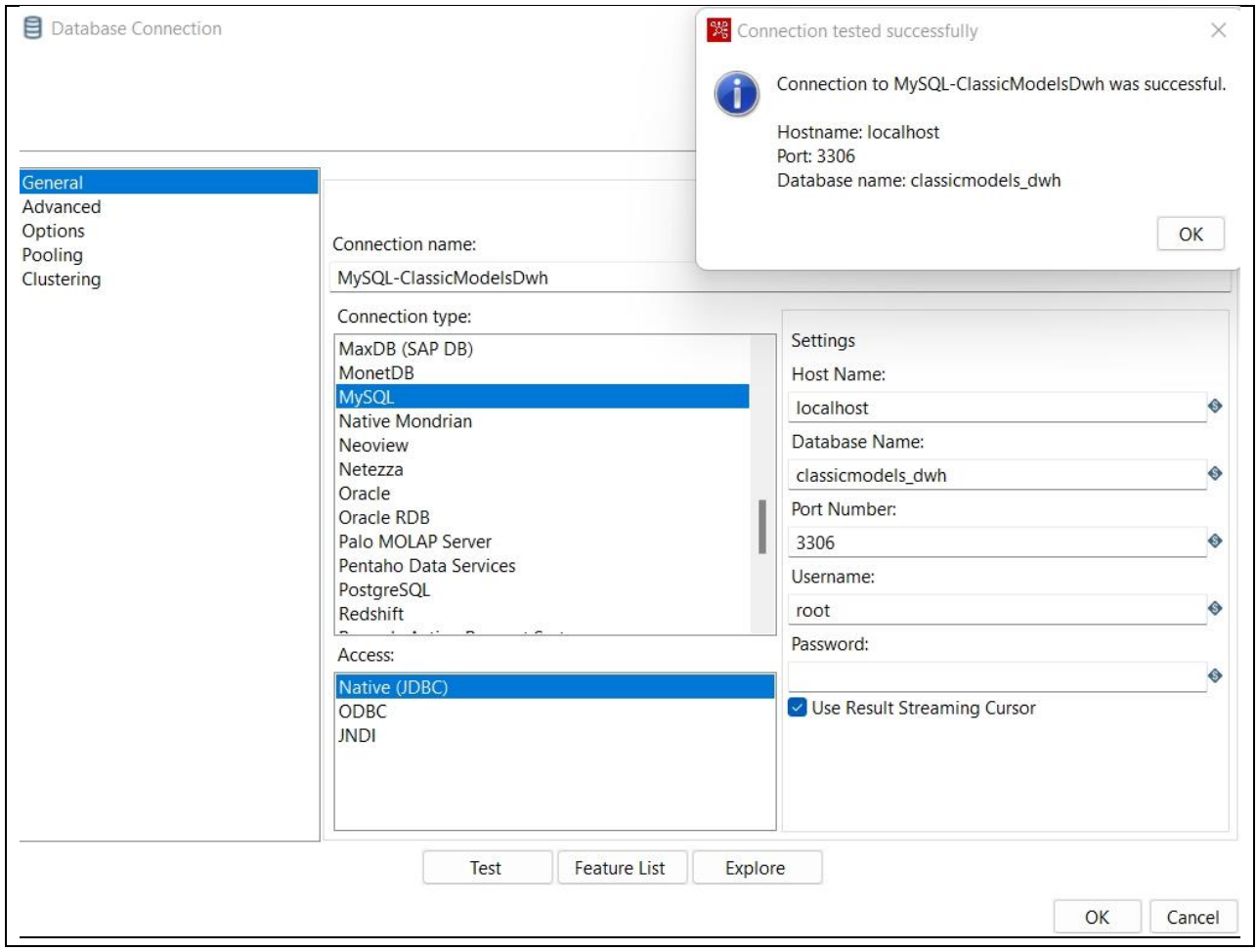


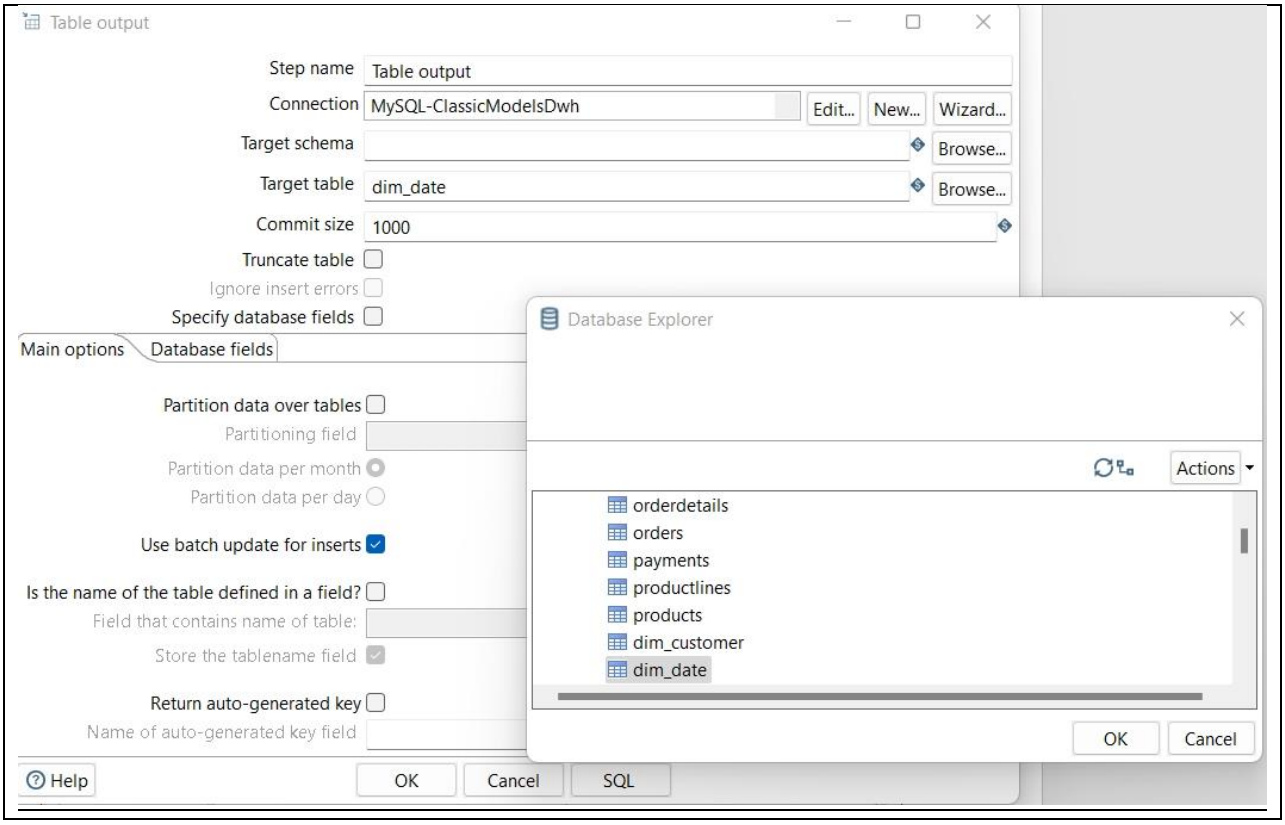
9. Select values



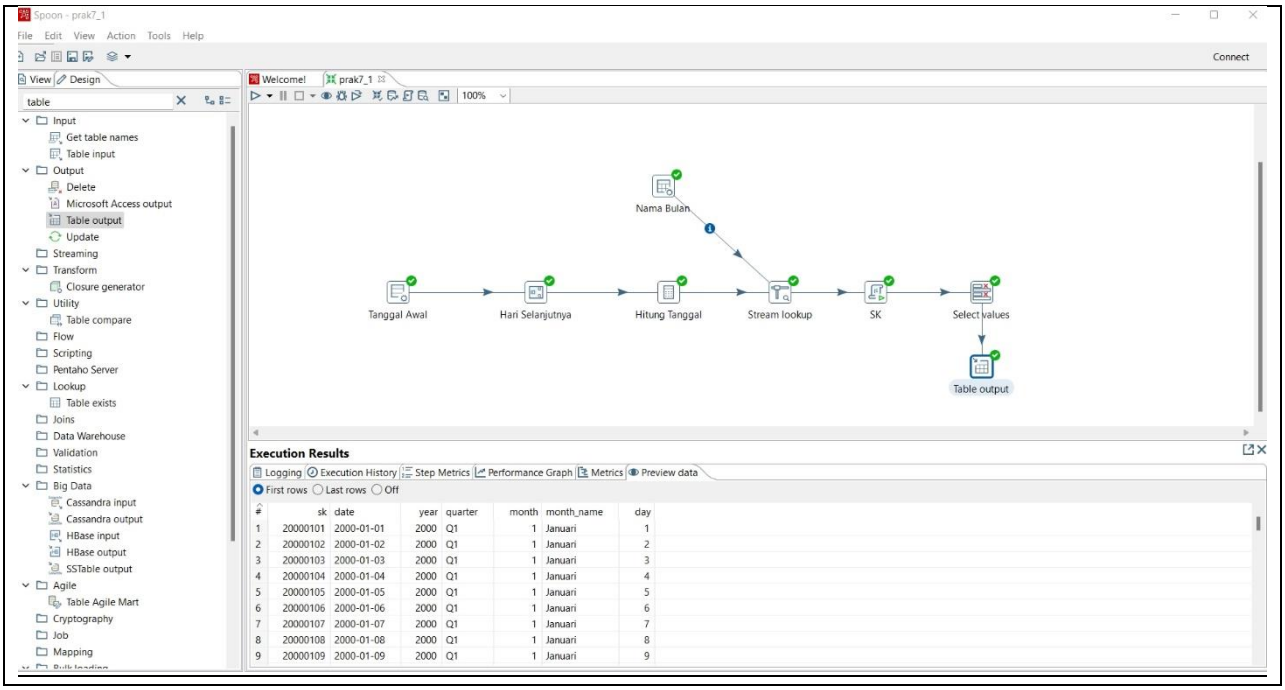
10. Table output




Database Connection
Connection tested successfully
Connection to MySQL-ClassicModelsDwh was successful.
Hostname: localhost
Port: 3306
Database name: classicmodels_dwh
OK
General
Advanced
Options
Pooling
Clustering
Connection name:
MySQL-ClassicModelsDwh
Connection type:
MaxDB (SAP DB)
MonetDB
MySQL
Native Mondrian
Neoview
Netezza
Oracle
Oracle RDB
Palo MOLAP Server
Pentaho Data Services
PostgreSQL
Redshift
Access:
Native (JDBC)
ODBC
JNDI
Settings
Host Name:
localhost
Database Name:
classicmodels_dwh
Port Number:
3306
Username:
root
Password:
Use Result Streaming Cursor
Test
Feature List
Explore
OK
Cancel

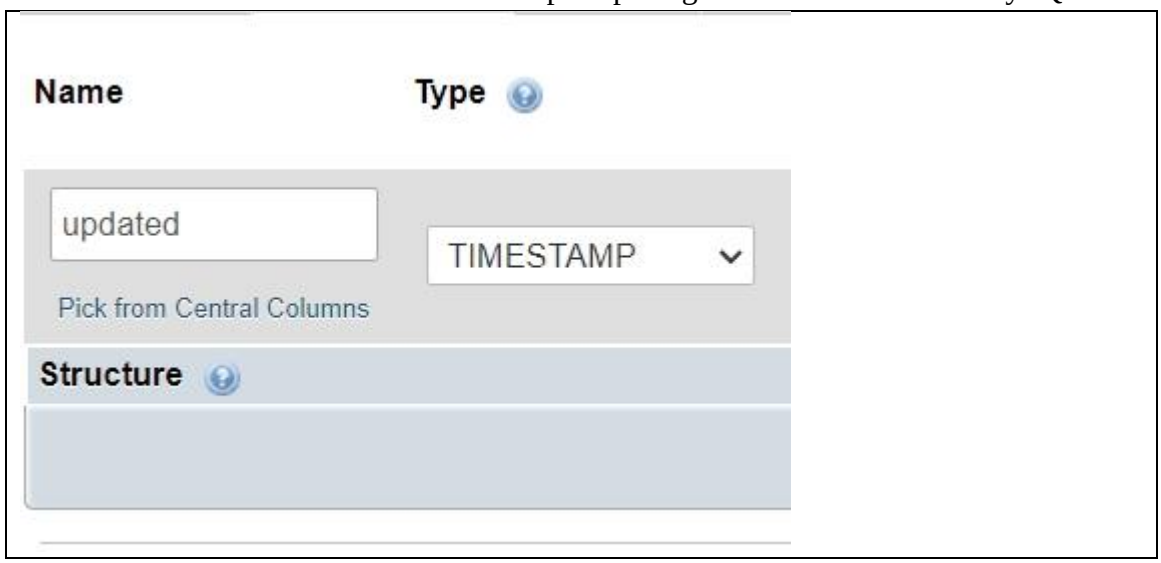


11. Ketika berhasil di Jalankan/Running

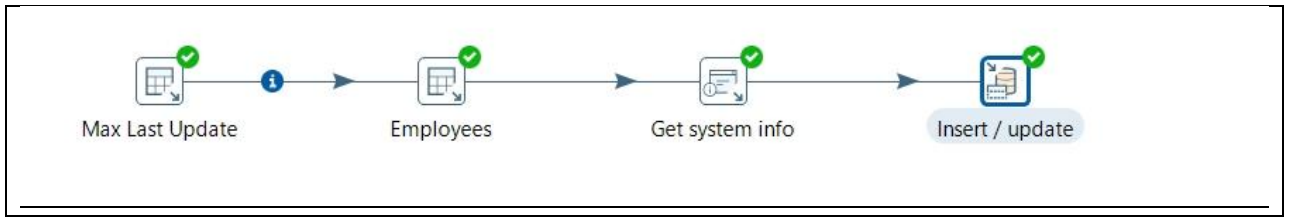


b. Latihan Kedua – Dim Customer Transformation

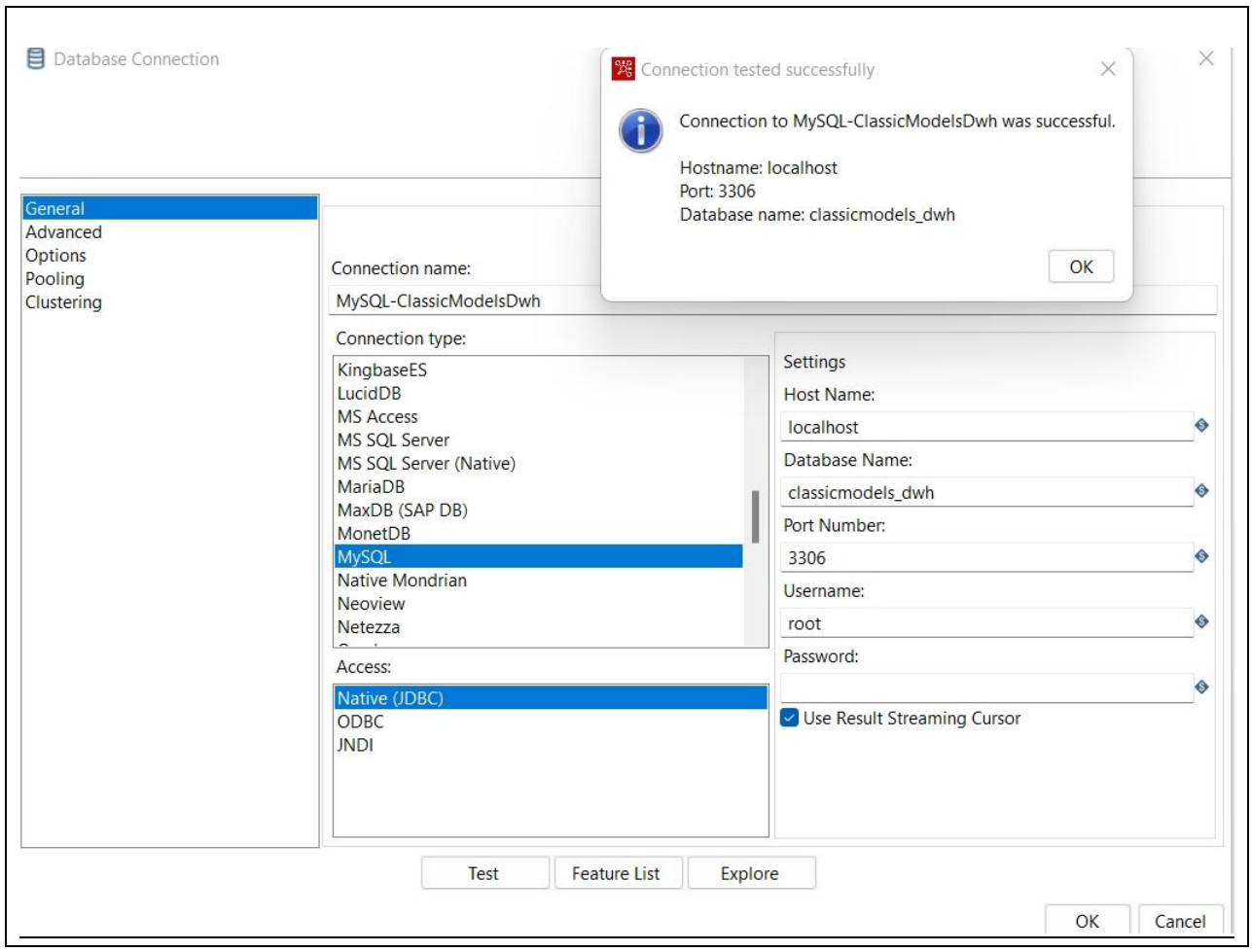
1. Tambahkan kolom baru bernama updated dengan tipe data timestamp pada tabel customer dalam database classicmodels seperti pada gambar dibawah ini di MySQL.

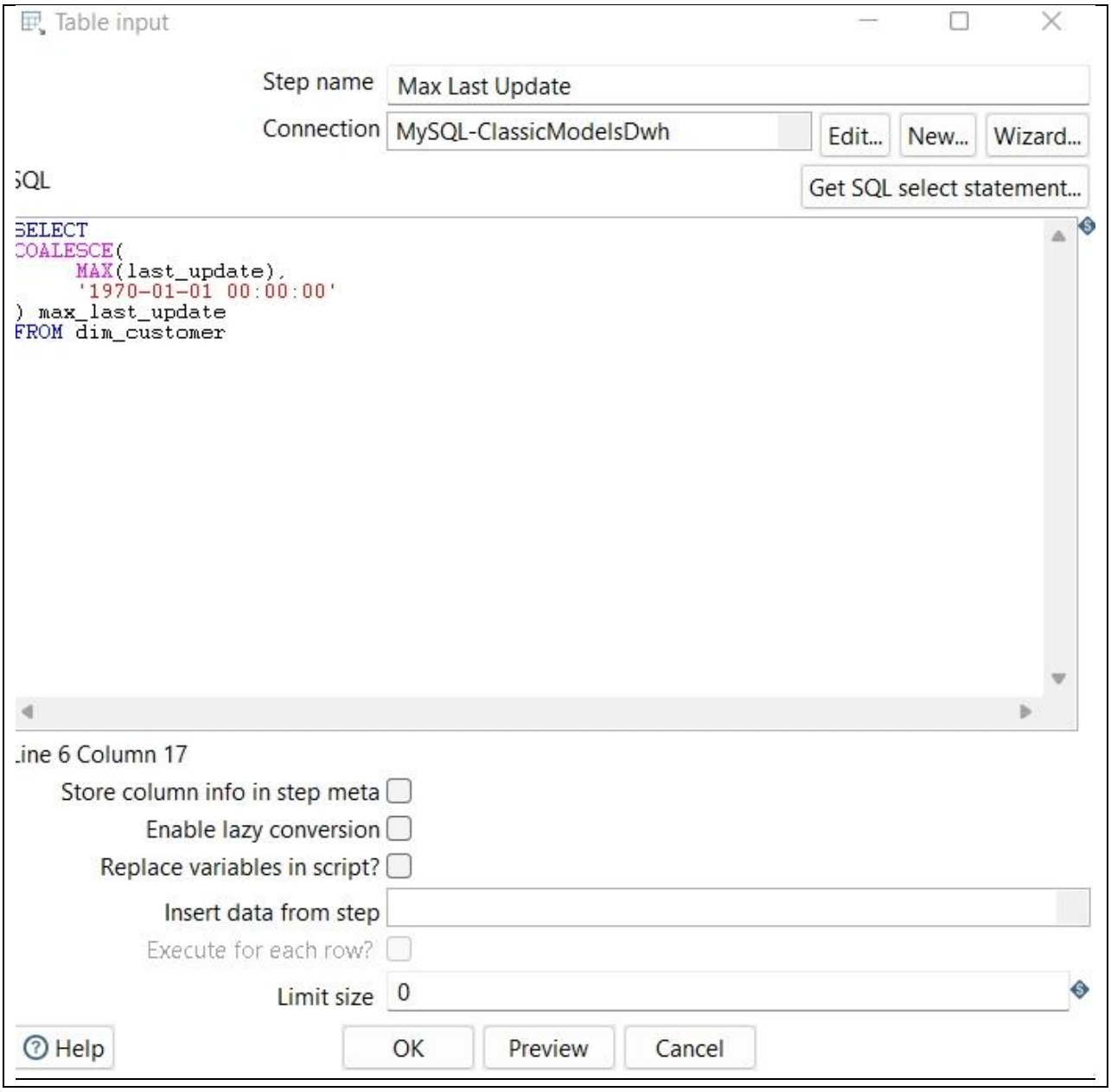


2. Struktur Dim Customer

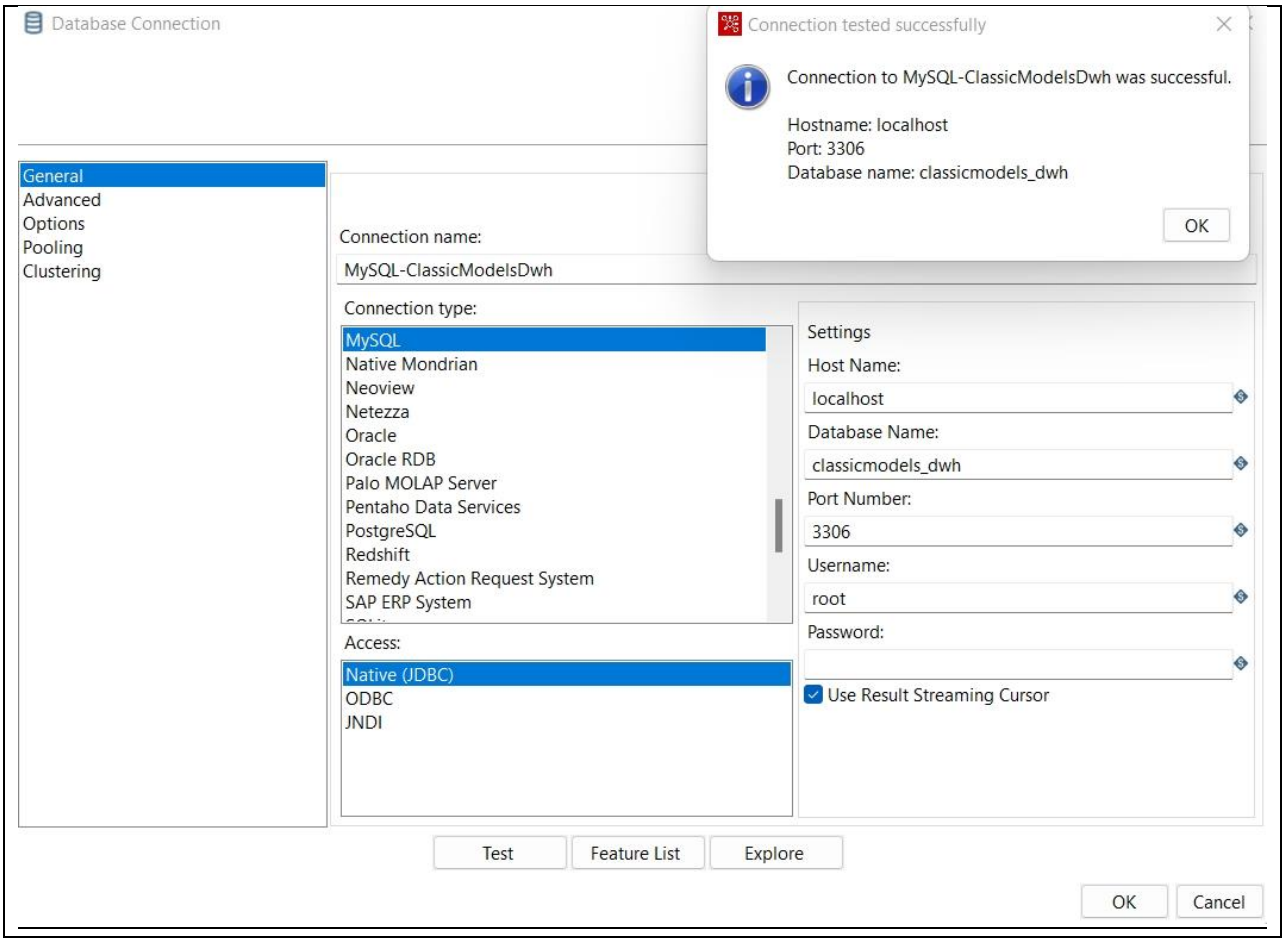


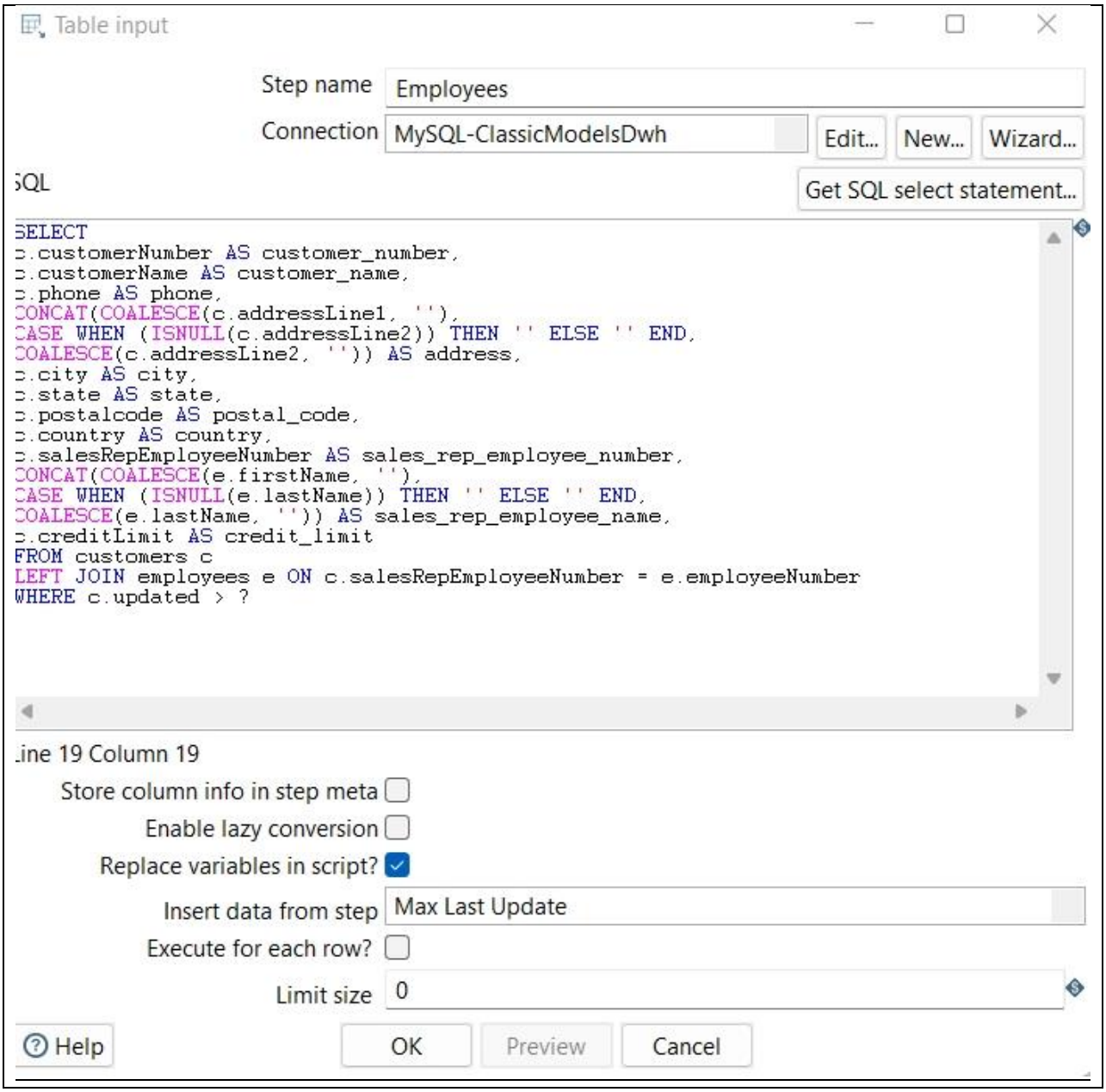
3. Max Last Update – Table input.



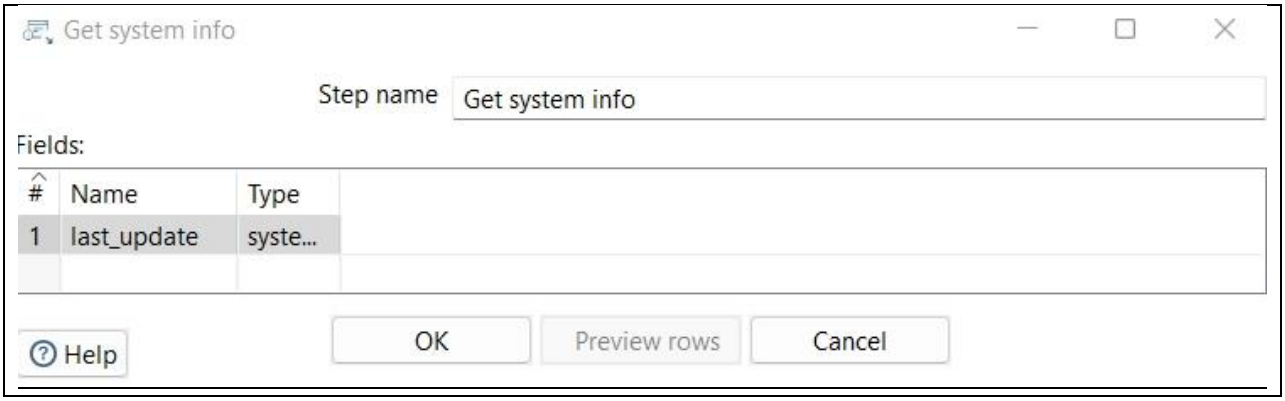


4. Employees – Table input.

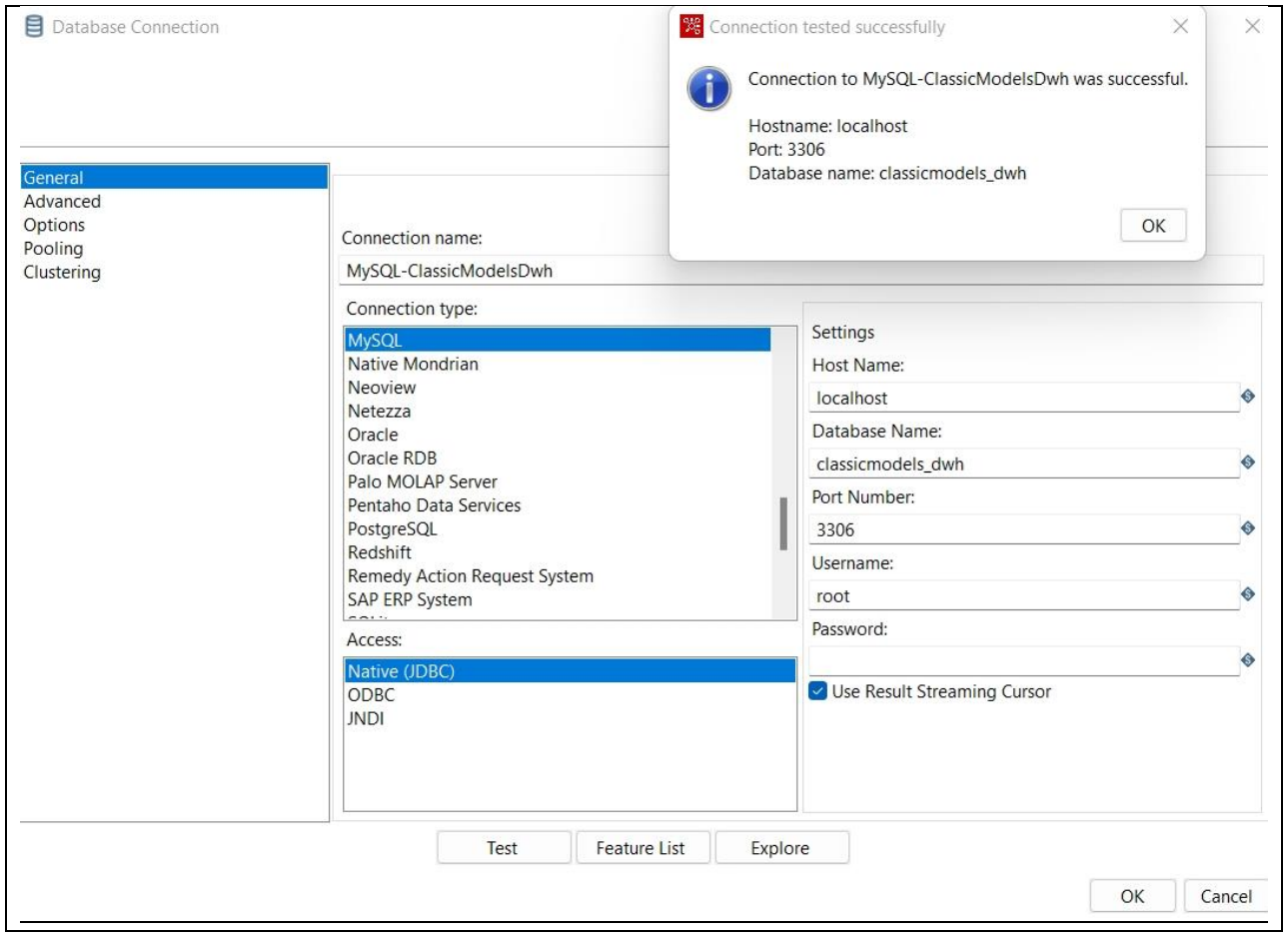

Database Connection
Connection tested successfully
Connection to MySQL-ClassicModelsDwh was successful.
Hostname: localhost
Port: 3306
Database name: classicmodels_dwh
OK
General
Advanced
Options
Pooling
Clustering
Connection name:
MySQL-ClassicModelsDwh
Connection type:
MySQL
Native Mondrian
Neoview
Netezza
Oracle
Oracle RDB
Palo MOLAP Server
Pentaho Data Services
PostgreSQL
Redshift
Remedy Action Request System
SAP ERP System
Access:
Native (JDBC)
ODBC
JNDI
Settings
Host Name:
localhost
Database Name:
classicmodels_dwh
Port Number:
3306
Username:
root
Password:
Use Result Streaming Cursor
Test
Feature List
Explore
OK
Cancel

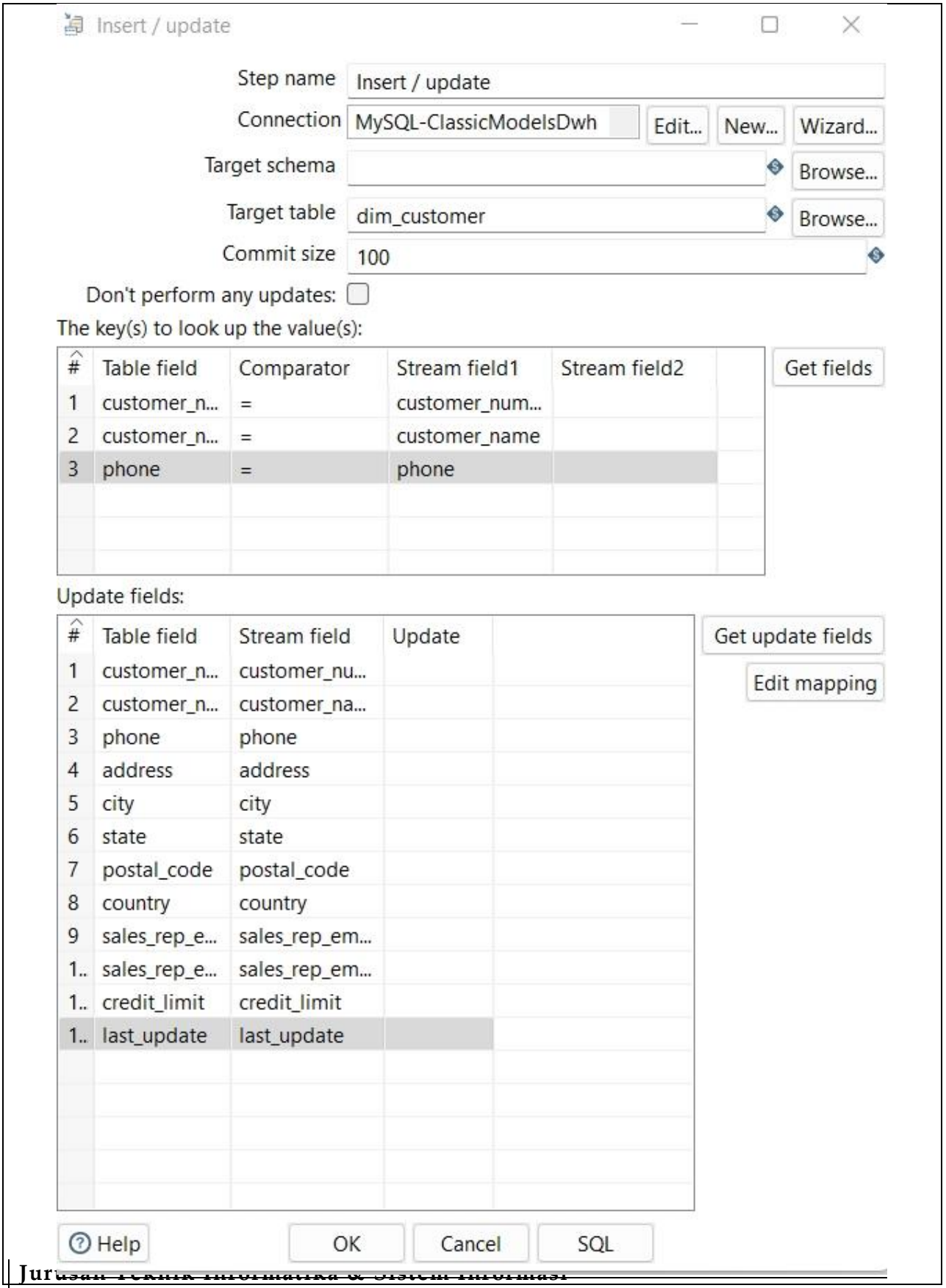


5. Get System Info

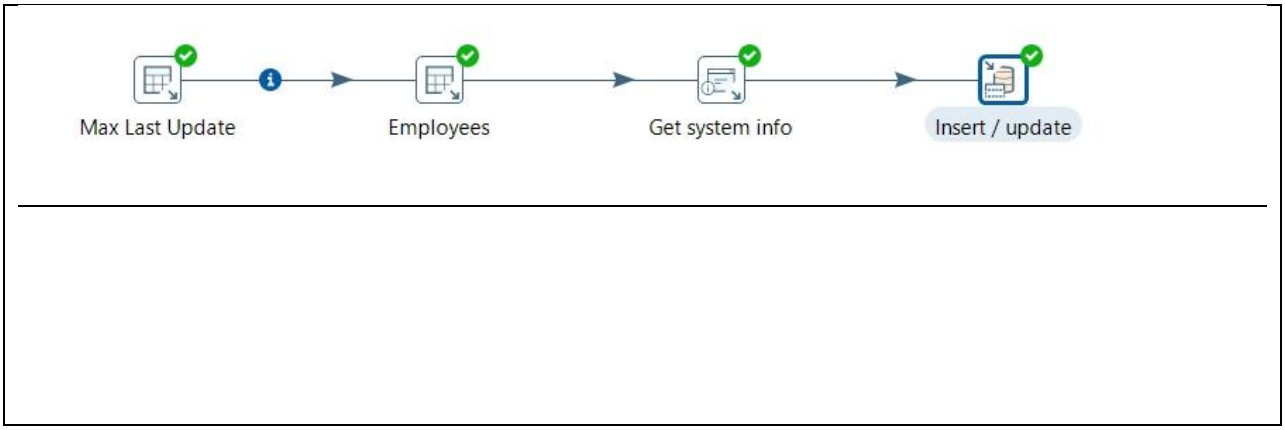


6. Insert / Update.


Database Connection
Connection tested successfully
Connection to MySQL-ClassicModelsDwh was successful.
Hostname: localhost
Port: 3306
Database name: classicmodels_dwh
OK
General
Advanced
Options
Pooling
Clustering
Connection name:
MySQL-ClassicModelsDwh
Connection type:
MySQL
Native Mondrian
Neoview
Netezza
Oracle
Oracle RDB
Palo MOLAP Server
Pentaho Data Services
PostgreSQL
Redshift
Remedy Action Request System
SAP ERP System
Access:
Native (JDBC)
ODBC
JNDI
Settings
Host Name:
localhost
Database Name:
classicmodels_dwh
Port Number:
3306
Username:
root
Password:
Use Result Streaming Cursor
Test
Feature List
Explore
OK
Cancel

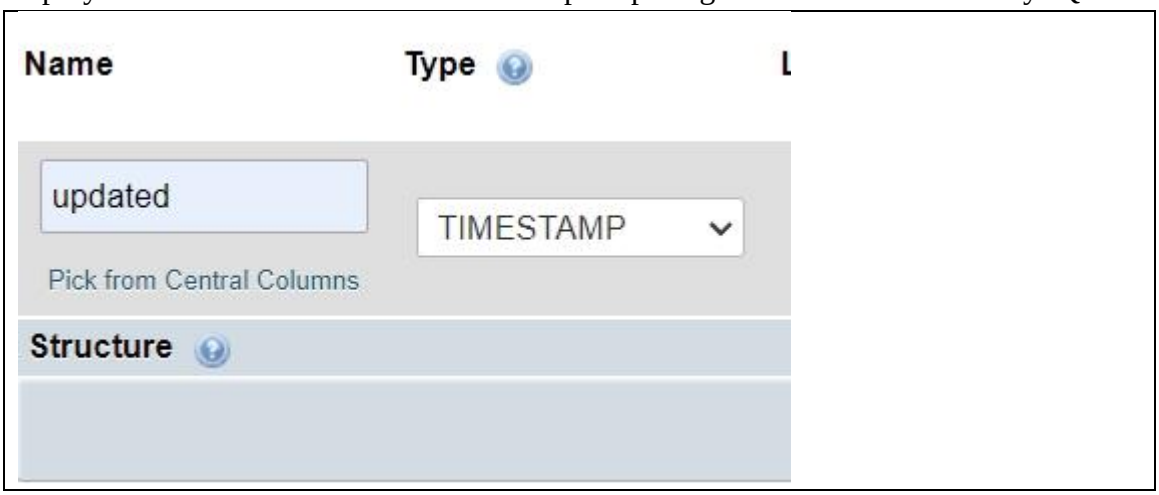

Insert / update
Step name
Insert / update
Connection
MySQL-ClassicModelsDwh
Edit...
New...
Wizard...
Target schema
Browse...
Target table
dim_customer
Browse...
Commit size
100
Don't perform any updates:
The key(s) to look up the value(s):
Table field Comparator Stream field1 Stream field2
1 customer_n... = customer_num...
2 customer_n... = customer_name
3 phone = phone
Get fields
Update fields:
Table field Stream field Update
1 customer_n... customer_nu...
2 customer_n... customer_na...
3 phone phone
4 address address
5 city city
6 state state
7 postal_code postal_code
8 country country
9 sales_rep_e... sales_rep_em...
1.. sales_rep_e... sales_rep_em...
1.. credit_limit credit_limit
1.. last_update last_update
Get update fields
Edit mapping
Help
OK
Cancel
SQL

7. Lalu Jalankan maka hasilnya akan seperti ini.



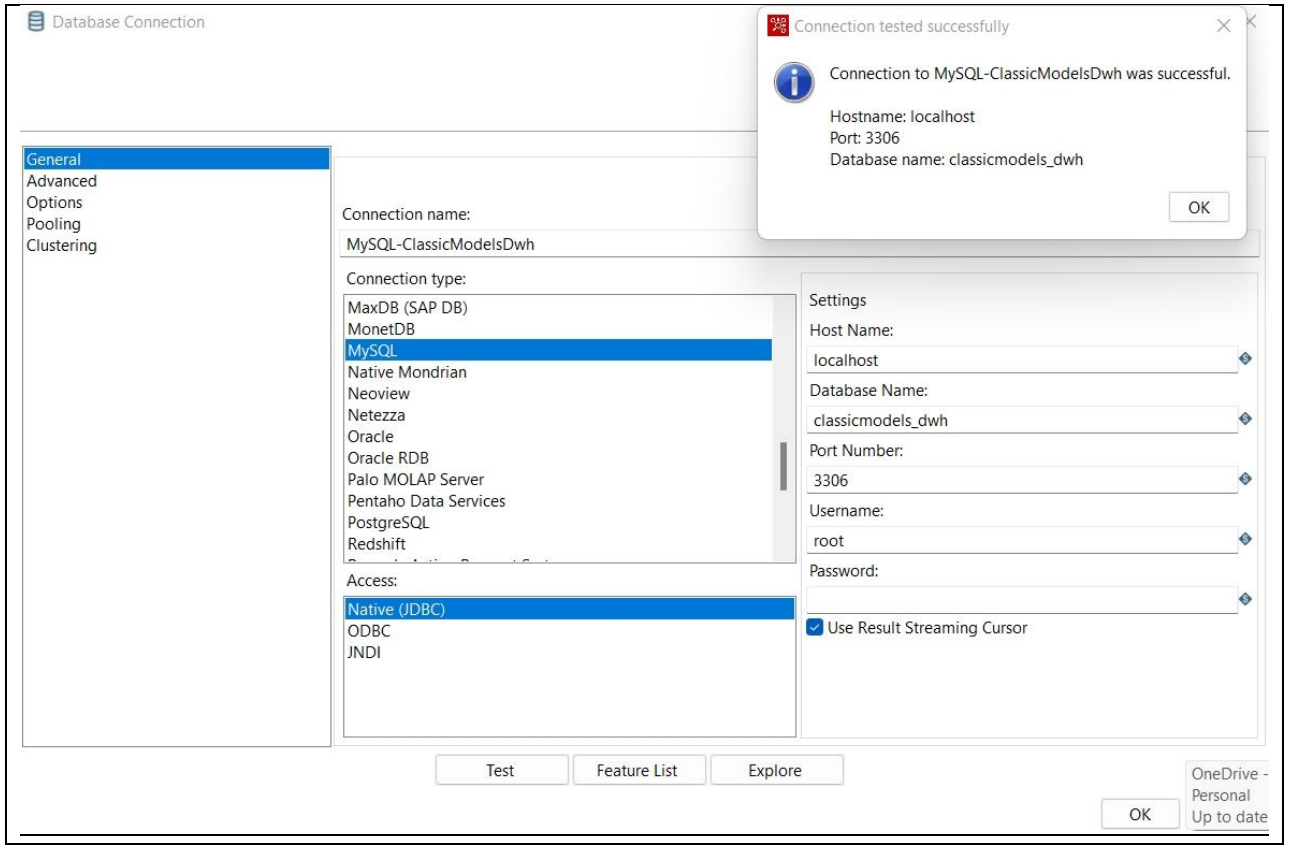
c. Latihan Ketiga – Dim Employee Transformation

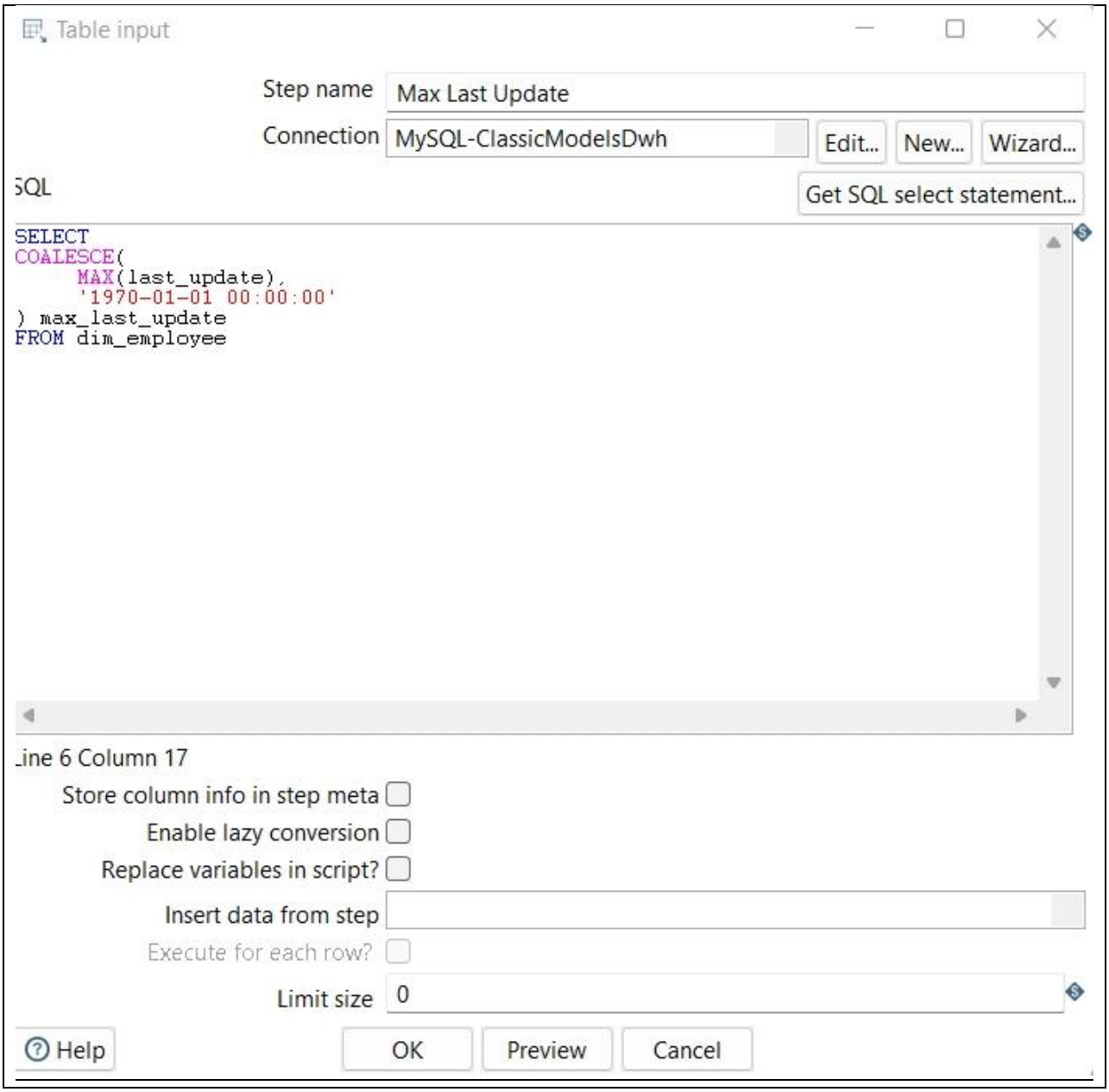
1. Tambahkan kolom baru bernama updated dengan tipe data timestamp pada tabel employees dalam database classicmodels seperti pada gambar dibawah ini di MySQL.



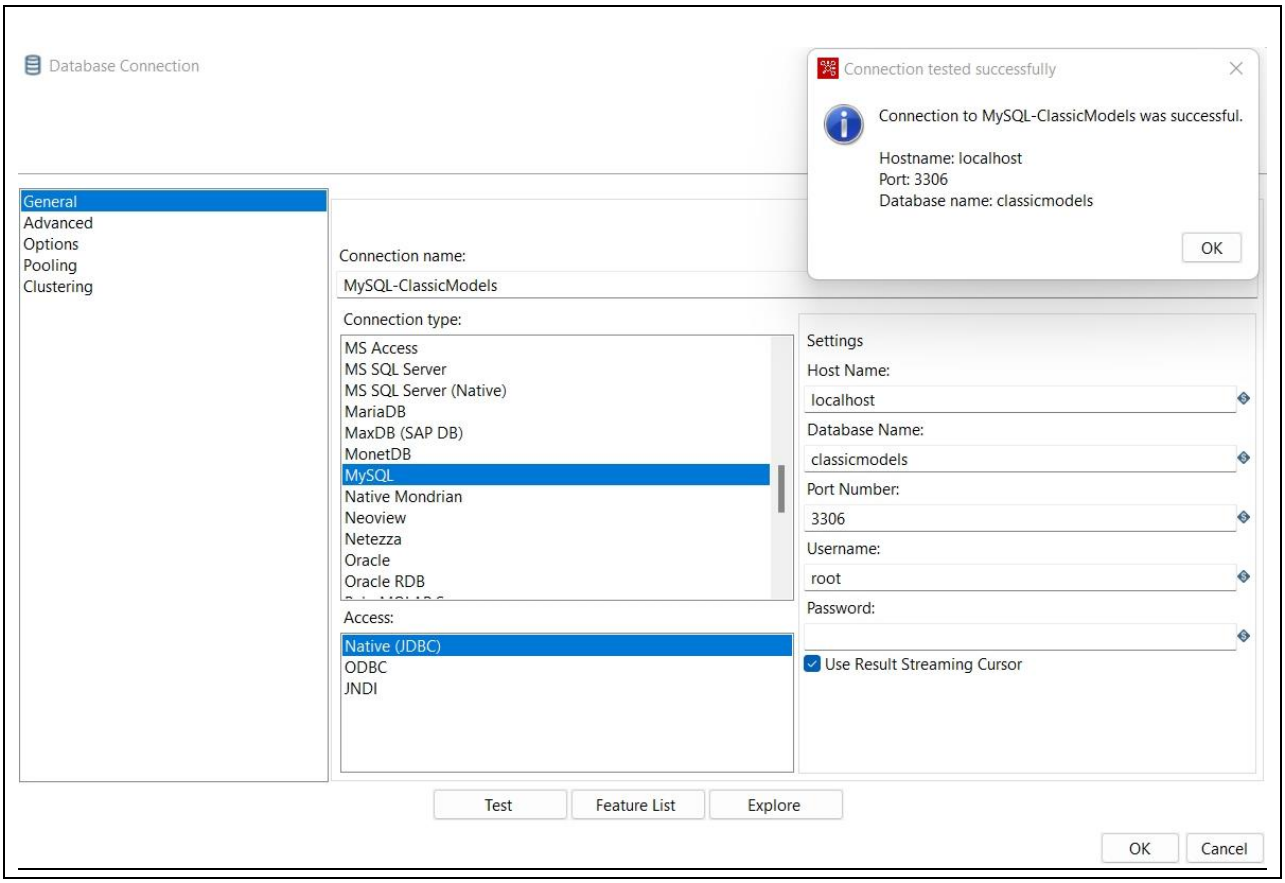
2. Struktur Dim Employee

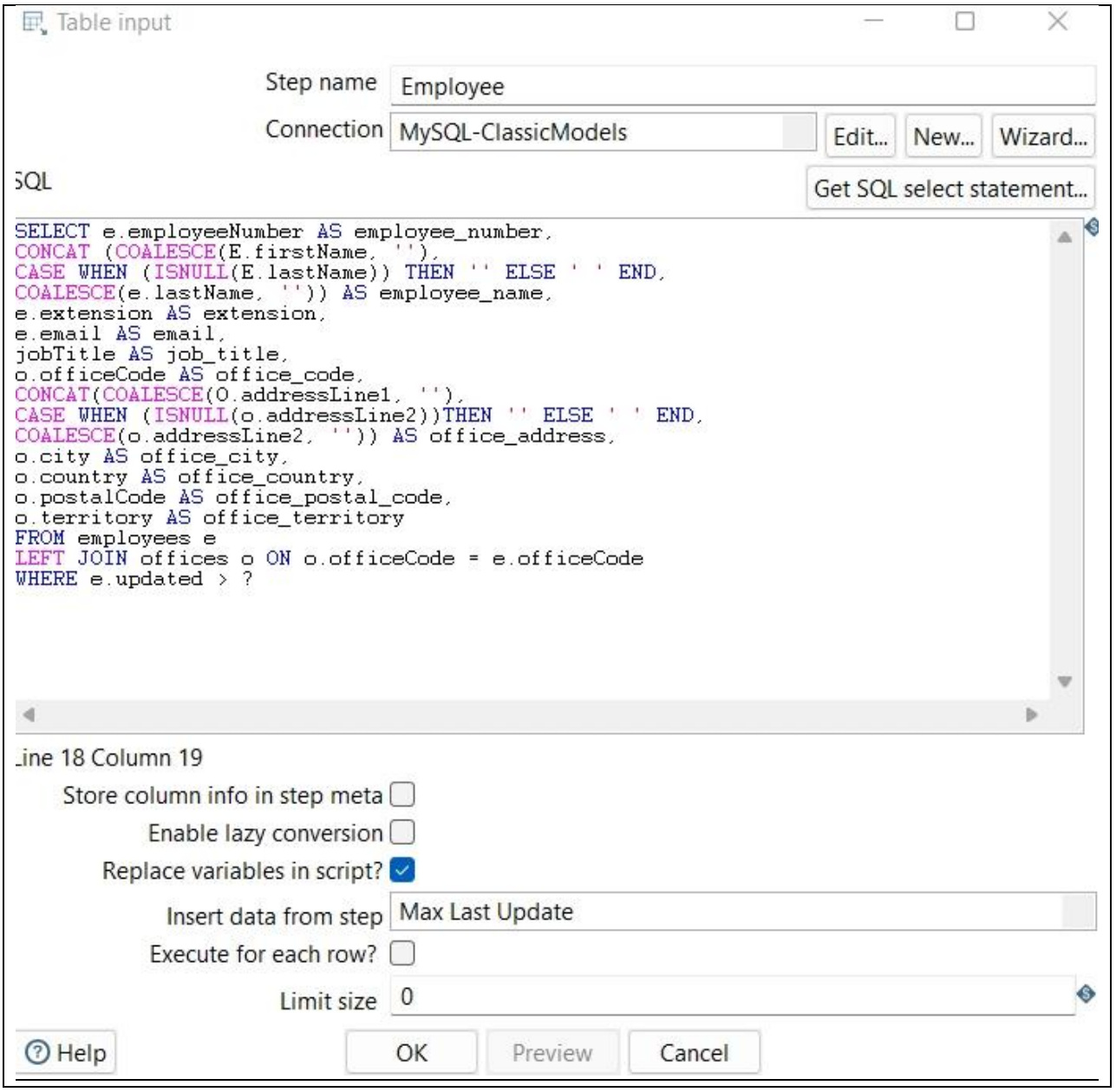
3. Max Last Update – Table input.



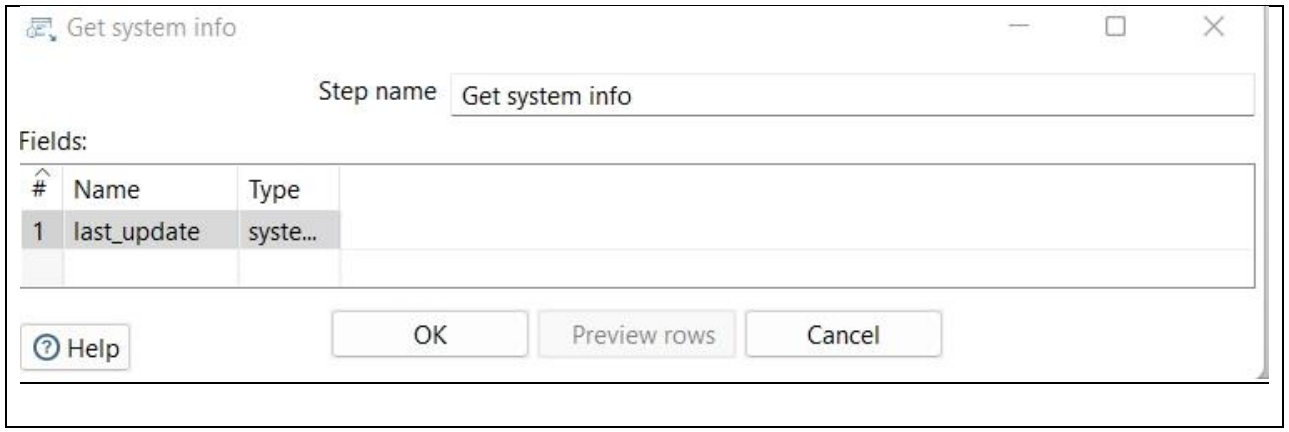


4. Employee – Table input.

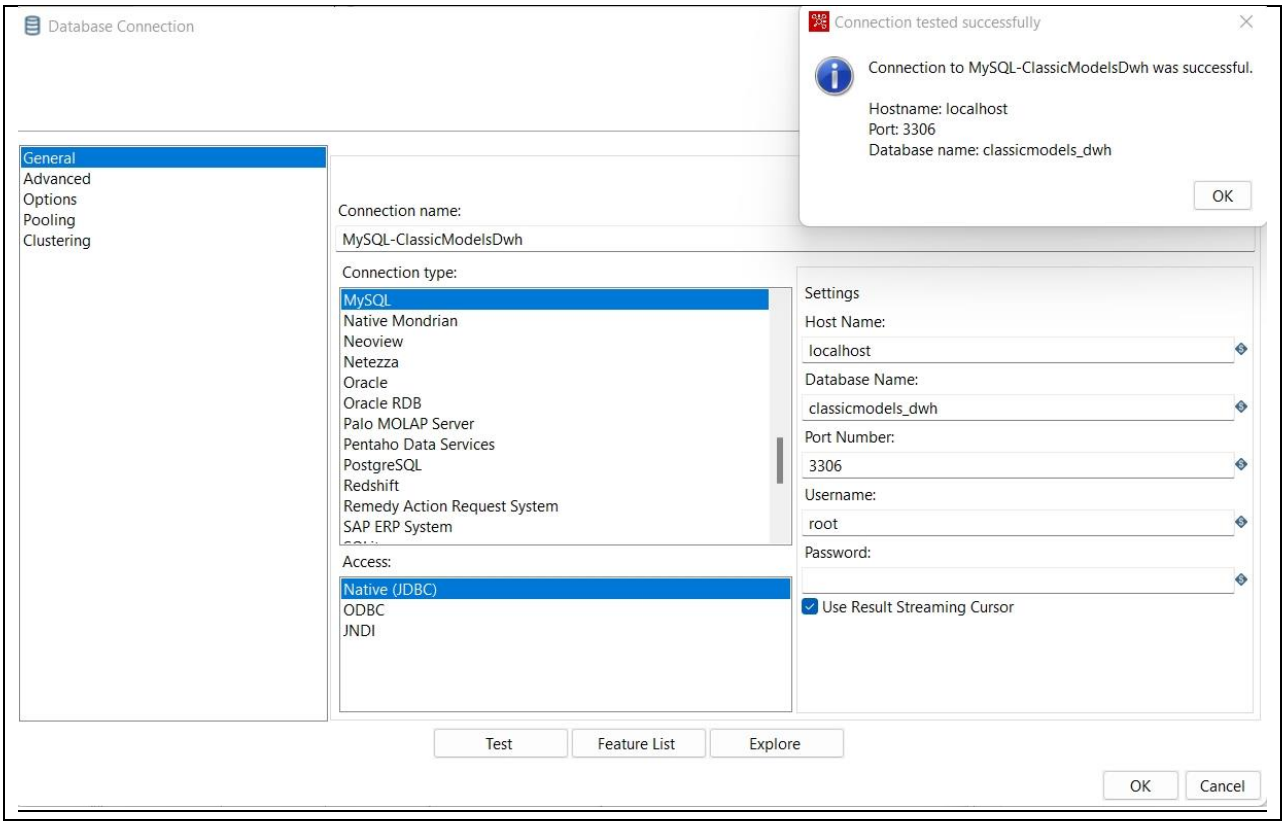

Database Connection
Connection tested successfully
Connection to MySQL-ClassicModels was successful.
Hostname: localhost
Port: 3306
Database name: classicmodels
OK
General
Advanced
Options
Pooling
Clustering
Connection name:
MySQL-ClassicModels
Connection type:
MS Access
MS SQL Server
MS SQL Server (Native)
MariaDB
MaxDB (SAP DB)
MonetDB
MySQL
Native Mondrian
Neoview
Netezza
Oracle
Oracle RDB
Access:
Native (JDBC)
ODBC
JNDI
Settings
Host Name:
localhost
Database Name:
classicmodels
Port Number:
3306
Username:
root
Password:
Use Result Streaming Cursor
Test
Feature List
Explore
OK
Cancel

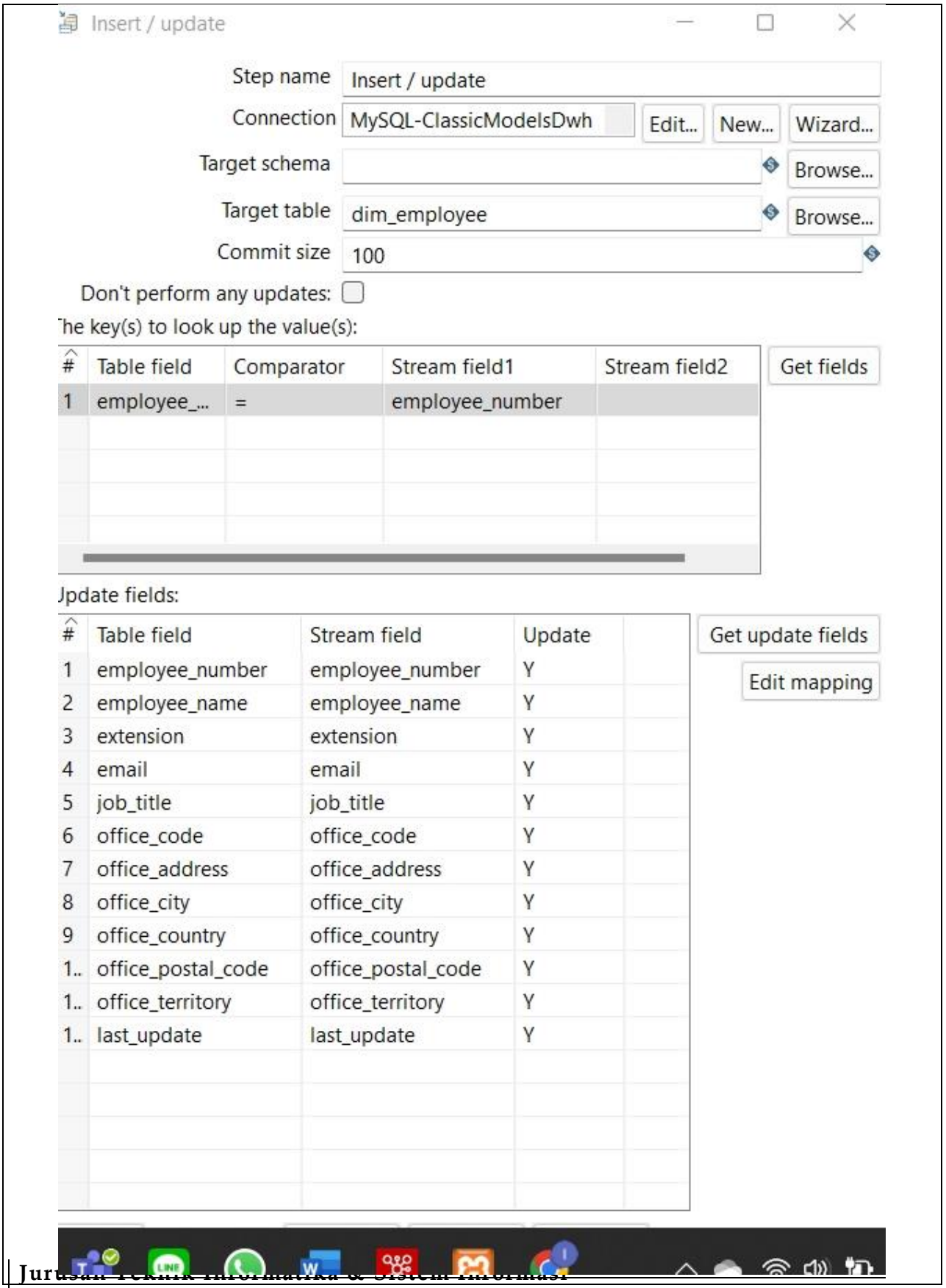


5. Get System Info

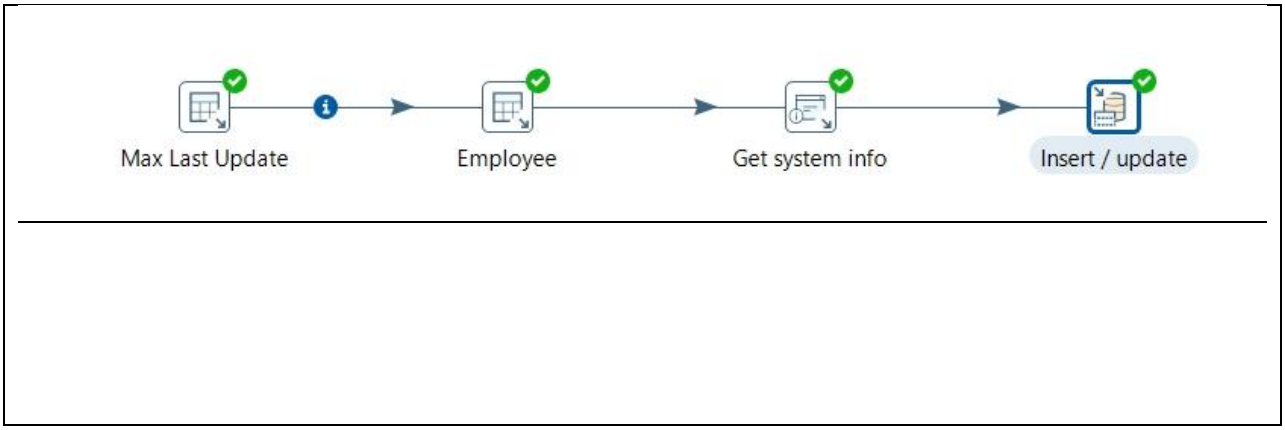


6. Insert / Update


Database Connection
General
Advanced
Options
Pooling
Clustering
Connection name:
MySQL-ClassicModelsDwh
Connection type:
MySQL
Native Mondrian
Neoview
Netezza
Oracle
Oracle RDB
Palo MOLAP Server
Pentaho Data Services
PostgreSQL
Redshift
Remedy Action Request System
SAP ERP System
Access:
Native (JDBC)
ODBC
JNDI
Settings
Host Name:
localhost
Database Name:
classicmodels_dwh
Port Number:
3306
Username:
root
Password:
Use Result Streaming Cursor
Test
Feature List
Explore
OK
Cancel
Connection tested successfully
Connection to MySQL-ClassicModelsDwh was successful.
Hostname: localhost
Port: 3306
Database name: classicmodels_dwh
OK


Insert / update
Step name
Insert / update
Connection
MySQL-ClassicModelsDwh
Edit...
New...
Wizard...
Target schema
Browse...
Target table
dim_employee
Browse...
Commit size
100
Don't perform any updates:
he key(s) to look up the value(s):
Table field Comparator Stream field1 Stream field2
1 employee_... = employee_number
Get fields
Jpdate fields:
Table field Stream field Update
1 employee_number employee_number Y
2 employee_name employee_name Y
3 extension extension Y
4 email email Y
5 job_title job_title Y
6 office_code office_code Y
7 office_address office_address Y
8 office_city office_city Y
9 office_country office_country Y
1.. office_postal_code office_postal_code Y
1.. office_territory office_territory Y
1.. last_update last_update Y
Get update fields
Edit mapping

7. Output ketika di Running dan Dijalankan



4. File Praktikum

Github Repository:

https://github.com/IbnuFajar7/Data-Warehouse/tree/main/Prak-7

5. Soal Latihan

Soal:

1. Apa yang dimaksud dengan Dimensi dalam Data Warehouse?
2. Apa yang dimaksud dengan Skema dalam Data Warehouse?

Jawaban:

1. Dimensi adalah struktur yang mengkategorikan kumpulan informasi sehingga. Dimensi dalam manajemen data dan data warehouse (gudang data) berisi data yang relatif statis. Namun data dari dimensi dapat berubah secara perlahan dari waktu ke waktu dan pada interval yang tidak dapat diprediksi.

2. Terdapat tiga skema dalam data warehouse, yaitu Star Schema, Snowflake Schema, dan Galaxy Schema. merupakan skema paling sederhana yang memiliki satu tabel tengah yaitu tabel fakta dimana tabel tersebut terhubung dengan beberapa dimensi tabel lainnya.

6. Kesimpulan

a. Dalam pengerjaan praktikum Data Warehouse, kita harus benar-benar teliti dalam menginputkan suatu fungsi untuk menampilkan suatu keluaran pada layar dengan sesuai.
b. Kita dapat mengetahui bahwa dalam praktikum ini kitab isa mengupdate suatu data dalam bentuk skema dan dimensi dalam aplikasi yang memudahkan kita untuk mengolah data update tersebut secara langsung bersamaan tanpa satu persatu mengupdate data tersebut.

7. Cek List (✓)

No	Elemen Kompetensi	Penyelesaian	
		Selesai	Tidak Selesai

1.	Latihan Pertama	✓	
2.	Latihan Kedua	✓	
3.	Latihan Ketiga	✓	

8. Formulir Umpan Balik

No	Elemen Kompetensi	Waktu Pengerjaan	Kriteria
1.	Latihan Pertama	30 Menit	1
2.	Latihan Kedua	30 Menit	1
3.	Latihan Ketiga	30 Menit	1

Keterangan:
1. Menarik
2. Baik
3. Cukup
4. Kurang